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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/876,233	06/08/2001	Alfred Ludwig Heinz	APV30268C	6197

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EXAMINER

MORILLO, JANEL A

ART UNIT

PAPER NUMBER

1742

DATE MAILED: 01/14/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.	Applicant(s)	
09/876,233	HEINZ ET AL.	
Examiner	Art Unit	
Janelle Combs-Morillo	1742	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on November 20, 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-47 is/are pending in the application.
- 4a) Of the above claim(s) 24-36 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-23 and 37-47 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
- a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ | 6) <input type="checkbox"/> Other: |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on November 20, 2003 has been entered.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-23, 37, and 39-47 are rejected under 35 U.S.C. 103(a) as obvious over *ASM Handbook: Vol. 2 Properties and Selection: Nonferrous Alloys and Special-Purpose Materials* (ASM Vol 2) alone or with *ASM Handbook: Vol. 9 Metallography and Microstructures* (ASM Vol 9).

Aluminum Association alloys 2024 and 2124 entirely overlap the presently claimed alloy composition (see ASM Vol. 2 page 70 and 74 and Table below). ASM Vol. 2 teaches that 2024 and 2124 typically exhibits YS values within the presently claimed limits (see Table below).

Art Unit: 1742

	present invention	2024	2124
	claims 1 and 39		
Cu	3.8-4.9	3.8-4.9	3.8-4.9
Mg	1.2-1.8	1.2-1.8	1.2-1.8
Mn	0.1-0.9	0.3-0.9	0.3-0.9
Fe	0.12 max.	0.50 max.	0.30 max.
Si	0.1 max.	0.50 max.	0.20 max.
Ti	0.15 max.	0.15 max.	0.15 max.
Zn	0.20 max.	0.25 max.	0.25 max.
Cr	0.10 max.	0.10 max.	0.10 max.
impurities ea	0.05 max.	0.05 max.	0.05 max.
impurities total	0.15 max.	0.15 max.	0.15 max.
YS (L)	≥ 300 Mpa	490 Mpa (T861) 345 Mpa (T3)	440 Mpa (T851)
YS (LT)	≥ 270 Mpa	not given	435 Mpa (T851)
$K_{IC(a0)}$	100 Mpa \cdot m ^{0.5}	not given	not given

Concerning the $K_{IC(a0)}$ and YS (LT) and optionally grain size, the examiner asserts where the claimed and prior art products are identical or substantially identical in structure or composition, or have been process in an identical or substantially identical process, a prima facie case of either anticipation or obviousness has been established. *In re Best*, 562 F.2d 1252, 1255, 195 USPQ 430, 433 (CCPA 1977). Therefore, if the prior art teaches the identical chemical structure (as well as identical tempers, and substantially similar working/processing steps), the properties applicant discloses (such as $K_{IC(a0)}$ and YS (LT) and grain size) and/or claims are expected to be present.

ASM Vol 2 does not specify the average grain size of said AA2024 or AA2124 alloys. However, ASM Vol 9, gives typical micrographs of 2024-T3, 2024-T6, and 2024-T851 in the L and LT directions. ASM Vol 9 shows the average grain size of 2024 is $\leq 45\mu\text{m}$ (which corresponds to ASTM micrograin size number of at least 6). For example, Fig. 46 on page 365 of

ASM Vol 9 shows AA2024-T851 magnified 500x. In order to compare the scale of the present micrograph to μ , the examiner submits that

$$45\mu\text{m} * 500 = 22.5 * 10^3 \mu\text{m} = 22.5\text{mm}$$

and because the average grain size exhibited in Fig. 46 is clearly $\ll 22.5$ mm, the examiner asserts that the condition that an average grain size of at least 6 has been met. Note that the average grain size in micrographs 43 and 44, magnified 200x, is clearly < 9 mm.

It is held that ASM Vol 2 has created a prima facie case of obviousness of the presently claimed invention because the ASM Vol 2 teaches an overlapping alloy composition, and one of ordinary skill in the art would expect the same characteristics (including $K_{c(a0)}$, YS (LT), and grain size) to be present in the prior art alloys as in the presently claimed alloy. Alternatively, because ASM Vol 2 and ASM Vol 9 are both drawn to AA2024 alloys in the T851 temper, it is within the level of one of ordinary skill in the art to obtain a AA2024-T851 alloy with the presently claimed mechanical characteristics (ASM Vol 2) and grain structure (ASM Vol 9).

Concerning dependent claims 2-5 and 42, the examiner asserts that AA2024 and AA2124 overlap the presently claimed composition ranges.

Concerning dependent claims 6-10, 43, and 44, which are drawn to mechanical characteristics (see Table below) of said alloy, the ASM Vol 2 teaches that 2024 and 2124 overlap the presently claimed YS and TS. As stated above (and concerning the $K_{c(a0)}$ and YS (LT)) the examiner asserts that "products of identical chemical composition can not have mutually exclusive properties." *In re Spada*, 911 F.2d 705, 709, 15 USPQ2d 1655, 1658 (Fed. Cir. 1990). Therefore one of ordinary skill in the art would expect the same properties to be present for the presently claimed alloy composition, as in the prior art compositions.

Art Unit: 1742

Concerning dependent claims 11-13, the examiner points out that a ASM Vol 9 teaches that 2024-T851 plate, as seen in micrographs 43 (LT) and 44 (L), exhibit a grain aspect ratio $\leq 1:2$.

Concerning dependent claims 14, 15, and 37, the examiner asserts that ASM Vol 2 teaches that 2024 and 2124 are typically plate and sheet (Table 25, etc.) stock used for aircraft structures (page 70 and 74, under "Applications").

Concerning dependent claims 16, 21, and 47, the examiner points out that ASM Vol 9 shows the grain sizes typical for a variety of tempers. It is within the disclosure of ASM Vol 9 to obtain a grain size within the presently claimed ranges (see discussion above, and esp. ASM Vol. 9 Fig. 36, 46, etc.).

Concerning claims 17-20, 45, and 46, which are drawn to the elongation to fracture in the L or T directions, the ASM Handbook Vol 2 teaches 2024T3 obtains an elongation (L direction)=17%, which falls within the presently claimed values. The ASM Handbook Vol 2 does not teach the elongation in the T direction, however, one of ordinary skill in the art would expect the same properties to be present for the presently claimed alloy composition, as in the prior art compositions, because of the substantial overlap in alloying ranges (see also discussion above).

present invention							2024	2124
	claim 1 and 39	6	7	8	9	10		
YS (L)	≥ 300 Mpa	≥ 360 Mpa			≥ 360 Mpa	≥ 360 Mpa	490 Mpa (T861) 345 Mpa (T3)	440 Mpa (T851)
YS (LT)	≥ 270 Mpa	≥ 300 Mpa			≥ 300 Mpa	≥ 300 Mpa	not given	435 Mpa (T851)
TS (L)			≥ 475 Mpa					
TS (LT)			≥ 440 Mpa					
$K_{IC(20)}$	$100 \text{ Mpa}\cdot\text{m}^{0.5}$			$105 \text{ Mpa}\cdot\text{m}^{0.5}$	$170 \text{ Mpa}\cdot\text{m}^{0.5}$	$175 \text{ Mpa}\cdot\text{m}^{0.5}$	not given	not given

Concerning dependent claims 22 and 23, the examiner asserts that AA2024 is typically clad with a higher purity, more corrosion resistant alloy such as AA1230 (see ASM Vol 2, page 70, Chemical Composition of Alclad 2024).

4. Claim 38 is rejected under 35 U.S.C. 103(a) as being unpatentable over *ASM Handbook: Vol. 2 Properties and Selection: Nonferrous Alloys and Special-Purpose Materials* (ASM Vol 2) alone or with *ASM Handbook: Vol. 9 Metallography and Microstructures* (ASM Vol 9), as applied to claim 1 above.

With regard to the process steps of claim 38, it is well settled that a product-by-process claim defines a product, and that when the prior art discloses a product substantially the same as that being claimed, differing only in the manner by which it is made, the burden falls to applicant to show that any process steps associated therewith result in a product materially different from that disclosed in the prior art. See *In re Brown* (173 USPQ 685) and *In re Fessman* (180 USPQ 524). Therefore, it is held that the 2024 or 2124 alloy product taught by ASM Vol 2 (alternatively in view of ASM Vol 9) has created a prima facie case of obviousness of the presently claimed invention.

Double Patenting

5. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground

Art Unit: 1742

provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 1-23 and 37-47 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-17 and 28-30,33,35-42 of copending Application No. 10/195483. Although the conflicting claims are not identical, they are not patentably distinct from each other because the claims of copending Application No. 10/195483 are drawn to an identical alloy composition, which entirely overlap the presently claimed alloy composition.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.


Conclusion

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Janelle Combs-Morillo whose telephone number is (571) 272-1240. The examiner can normally be reached on 8:30 am- 6:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy King can be reached on (571) 272-1244. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

Jcm
January 6, 2004


GEORGE W. ZIMMERMAN
PATENT EXAMINER